

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

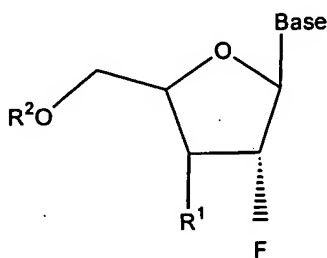
**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

3. The compound of claim 2, wherein the purine base is selected from the group consisting of guanine, adenine, hypoxanthine, 2,6-diaminopurine and 6-chloropurine, or a pharmaceutically acceptable salt thereof.

4. The compound of claim 1, wherein the base is a pyrimidine base, R^2 is H, monophosphate, diphosphate, triphosphate or acyl, or a pharmaceutically acceptable salt thereof.

5. The compound of claim 5, wherein the base is selected from the group consisting of thymine, cytosine, 5-methylcytosine, uracil, and 5-fluorouracil, or a pharmaceutically acceptable salt thereof.

6. A pharmaceutical composition comprising an effective treatment amount of the compound of the formula:



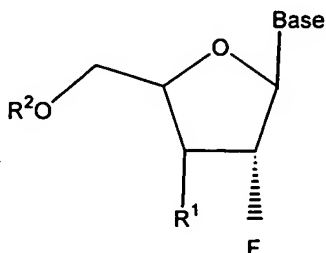
wherein

Base is a purine or pyrimidine base;

R^1 is OH, H, OR^3 , N_3 , CN, halogen, including F, or CF_3 , lower alkyl, amino, loweralkylamino, di(lower)alkylamino, or alkoxy, and base refers to a purine or pyrimidine base;

R^2 is H, phosphate, including monophosphate, diphosphate, triphosphate, or a stabilized phosphate prodrug; acyl, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of providing a compound wherein R^2 is H or phosphate; sulfonate ester including alkyl or arylalkyl sulfonyl including methanesulfonyl, benzyl, wherein

2. A method for the treatment of hepatitis C infection in humans, comprising administering to a patient in need thereof an effective treatment amount of the compound of the formula:



10 wherein

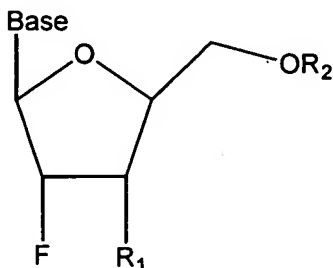
Base is a purine or pyrimidine base;

R^1 is OH, H, OR^3 , N_3 , CN, halogen, CF_3 , lower alkyl, amino, loweralkylamino, di(lower)alkylamino, or alkoxy, and base refers to a purine or pyrimidine base;

15 R^2 is H, monophosphate, diphosphate, triphosphate, a stabilized phosphate prodrug, acyl, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of providing a compound wherein R^2 is H or phosphate; sulfonate ester, benzyl, wherein the phenyl group is optionally substituted with one or more substituents selected from the group consisting of hydroxyl, amino, alkylamino, arylamino, alkoxy, aryloxy, nitro, cyano, sulfonic acid, sulfate, phosphonic acid, phosphate, or phosphonate; a lipid, an amino acid, peptide, or cholesterol; and

20 R^3 is acyl, alkyl, phosphate, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of being cleaved to the parent compound, or a pharmaceutically acceptable salt thereof, optionally in combination with a pharmaceutically acceptable carrier.

- 5 3. A method for the treatment of abnormal cell proliferation in humans, comprising
administering to a patient in need thereof an effective treatment amount of a 2'fluoro- β -
L-nucleoside of the formula:



wherein

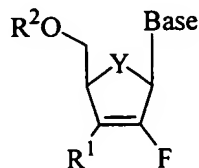
10 Base is a purine or pyrimidine base;

R¹ is OH, H, OR³, N₃, CN, halogen, CF₃, lower alkyl, amino, loweralkylamino,
di(lower)alkylamino;

15 R² is H, phosphate, including monophosphate, diphosphate, triphosphate, or a stabilized
phosphate prodrug, acyl, or other pharmaceutically acceptable leaving group which
when administered *in vivo*, is capable of providing a compound wherein R² is H or
phosphate; sulfonate ester, benzyl, wherein the phenyl group is optionally substituted
with one or more substituents selected from the group consisting of hydroxyl, amino,
alkylamino, arylamino, alkoxy, aryloxy, nitro, cyano, sulfonic acid, sulfate,
phosphonic acid, phosphate, or phosphonate; a lipid, an amino acid, peptide, or
20 cholesterol; and

R³ is acyl, alkyl, phosphate, or other pharmaceutically acceptable leaving group which
when administered *in vivo*, is capable of being cleaved to the parent compound, or a
pharmaceutically acceptable salt thereof, optionally in combination with a
pharmaceutically acceptable carrier.

4. A 2'-fluoro-(β -D or β -L)-nucleoside of the formula:



Y = S, CH₂ or CHF

wherein

Base is a purine base;

10 R¹ is H, OR³, N₃, CN, halogen, CF₃, lower alkyl, amino, loweralkylamino or di(lower)alkylamino;

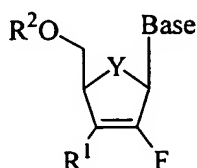
15 R² is H, monophosphate, diphosphate, triphosphate, a stabilized phosphate prodrug, acyl, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of providing a compound wherein R² is H or phosphate; sulfonate ester, benzyl, wherein the phenyl group is optionally substituted with one or more substituents selected from the group consisting of hydroxyl, amino, alkylamino, arylamino, alkoxy, aryloxy, nitro, cyano, sulfonic acid, sulfate, phosphonic acid, phosphate, or phosphonate; a lipid, an amino acid, peptide, or cholesterol; and

20 R³ is acyl, alkyl, phosphate, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of being cleaved to the parent compound, or a pharmaceutically acceptable salt thereof, optionally in combination with a pharmaceutically acceptable carrier.

- 25 5. The compound of claim 4, wherein the base is a purine base, R² is H, monophosphate, diphosphate, triphosphate or acyl, or a pharmaceutically acceptable salt thereof.

6. The compound of claim 4, wherein the purine base is selected from the group consisting of guanine, adenine, hypoxanthine, 2,6-diaminopurine and 6-chloropurine, or a pharmaceutically acceptable salt thereof.

- 10 7. A pharmaceutical composition comprising an effective treatment amount of a 2'-fluoro-(β -D or β -L)-nucleoside of the formula:



Y= S, CH₂ or CHF

wherein

Base is a purine base;

- 15 R¹ is H, OR³, N₃, CN, halogen, CF₃, lower alkyl, amino, loweralkylamino or di(lower)alkylamino;

R² is H, monophosphate, diphosphate, triphosphate, a stabilized phosphate prodrug, acyl, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of providing a compound wherein R² is H or phosphate; sulfonate ester, benzyl, wherein the phenyl group is optionally substituted with one or more substituents selected from the group consisting of hydroxyl, amino, alkylamino, arylamino, alkoxy, aryloxy, nitro, cyano, sulfonic acid, sulfate, phosphonic acid, phosphate, or phosphonate; a lipid, an amino acid, peptide, or cholesterol; and

20

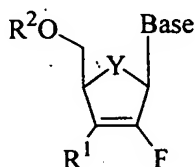
R³ is acyl, alkyl, phosphate, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of being cleaved to the parent compound, or a

25

5 pharmaceutically acceptable salt thereof, optionally in combination with a
pharmaceutically acceptable carrier.

8. The composition of claim 7, wherein the base is a purine base selected from the group
consisting of guanine, adenine, hypoxanthine, 2,6-diaminopurine and 6-chloropurine, or a
10 pharmaceutically acceptable salt thereof.

9. A method for the treatment of hepatitis B infection comprising administering to a host in
need thereof an effective treatment amount of a 2'-fluoro-(β -D or β -L)-nucleoside of the
formula:



15 Y= S, CH₂ or CHF

wherein

Base is a purine base;

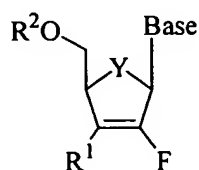
R¹ is H, OR³, N₃, CN, halogen, CF₃, lower alkyl, amino, loweralkylamino or
di(lower)alkylamino;

20 R² is H, monophosphate, diphosphate, triphosphate, a stabilized phosphate prodrug; acyl,
or other pharmaceutically acceptable leaving group which when administered *in vivo*,
is capable of providing a compound wherein R² is H or phosphate; sulfonate ester,
benzyl, wherein the phenyl group is optionally substituted with one or more
substituents selected from the group consisting of hydroxyl, amino, alkylamino,

5 arylamino, alkoxy, aryloxy, nitro, cyano, sulfonic acid, sulfate, phosphonic acid,
phosphate, or phosphonate; a lipid, an amino acid, peptide, or cholesterol; and

10 R^3 is acyl, alkyl, phosphate, or other pharmaceutically acceptable leaving group which
when administered *in vivo*, is capable of being cleaved to the parent compound, or a
pharmaceutically acceptable salt thereof, optionally in combination with a
pharmaceutically acceptable carrier.

10. A method for the treatment of hepatitis C infection comprising administering to a host in
need thereof an effective treatment amount of a 2'-fluoro-nucleoside of the formula:



Y = S, CH₂ or CHF

15 wherein

Base is a purine or pyrimidine base;

R¹ is H, OR³, N₃, CN, halogen, CF₃, lower alkyl, amino, loweralkylamino or
di(lower)alkylamino;

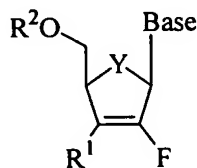
20 R² is H, monophosphate, diphosphate, triphosphate, a stabilized phosphate prodrug, acyl,
or other pharmaceutically acceptable leaving group which when administered *in vivo*,
is capable of providing a compound wherein R² is H or phosphate; sulfonate ester,
benzyl, wherein the phenyl group is optionally substituted with one or more
substituents selected from the group consisting of hydroxyl, amino, alkylamino,
arylamino, alkoxy, aryloxy, nitro, cyano, sulfonic acid, sulfate, phosphonic acid,
25 phosphate, or phosphonate;; a lipid, an amino acid, peptide, or cholesterol; and

5

R^3 is acyl, alkyl, phosphate, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of being cleaved to the parent compound, or a pharmaceutically acceptable salt thereof, optionally in combination with a pharmaceutically acceptable carrier.

10

11. A method for inhibiting the replication of HIV comprising administering to a host in need thereof an effective treatment amount of a 2'-fluoro-(β -D or β -L)-nucleoside of the formula:



$Y = S, CH_2 \text{ or } CHF$

wherein

15

Base is a purine base;

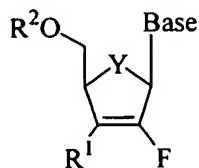
R^1 is H, OR^3 , N_3 , CN, halogen, CF_3 , lower alkyl, amino, loweralkylamino or di(lower)alkylamino;

20

R^2 is H, monophosphate, diphosphate, triphosphate, a stabilized phosphate prodrug, acyl, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of providing a compound wherein R^2 is H or phosphate; sulfonate ester, benzyl, wherein the phenyl group is optionally substituted with one or more substituents selected from the group consisting of hydroxyl, amino, alkylamino, arylamino, alkoxy, aryloxy, nitro, cyano, sulfonic acid, sulfate, phosphonic acid, phosphate, or phosphonate; a lipid, an amino acid, peptide, or cholesterol; and

5 R^3 is acyl, alkyl, phosphate, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of being cleaved to the parent compound, or a pharmaceutically acceptable salt thereof, optionally in combination with a pharmaceutically acceptable carrier.

- 10 12. A method for the treatment of abnormal cell proliferation in humans comprising administering to a host in need thereof an effective treatment amount of a 2'-fluoro-nucleoside of the formula:



Y = O, S, CH₂ or CHF

wherein

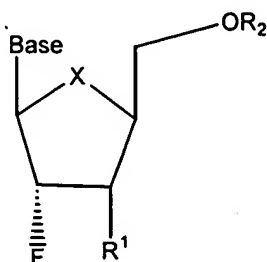
15 Base is a purine or pyrimidine base;

R¹ is H, OR³, N₃, CN, halogen, CF₃, lower alkyl, amino, loweralkylamino or di(lower)alkylamino;

20 R² is H, monophosphate, diphosphate, triphosphate, a stabilized phosphate prodrug, acyl, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of providing a compound wherein R² is H or phosphate; sulfonate ester, benzyl, wherein the phenyl group is optionally substituted with one or more substituents selected from the group consisting of hydroxyl, amino, alkylamino, arylamino, alkoxy, aryloxy, nitro, cyano, sulfonic acid, sulfate, phosphonic acid, phosphate, or phosphonate; a lipid, an amino acid, peptide, or cholesterol; and

5 R^3 is acyl, alkyl, phosphate, or other pharmaceutically acceptable leaving group which
when administered *in vivo*, is capable of being cleaved to the parent compound, or a
pharmaceutically acceptable salt thereof, optionally in combination with a
pharmaceutically acceptable carrier.

10 13. A 2'-fluoro- β -L-nucleoside of the formula:



wherein

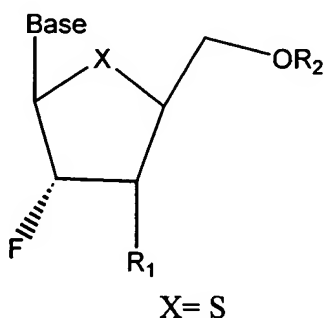
X is S;

Base is a purine base;

15 R^1 is OH, H, OR^3 , N_3 , CN, halogen, CF_3 , lower alkyl, amino, loweralkylamino, or
di(lower)alkylamino;

20 R^2 is H, monophosphate, diphosphate, triphosphate, a stabilized phosphate prodrug, acyl,
or other pharmaceutically acceptable leaving group which when administered *in vivo*,
is capable of providing a compound wherein R^2 is H or phosphate; sulfonate ester,
benzyl, wherein the phenyl group is optionally substituted with one or more
substituents selected from the group consisting of hydroxyl, amino, alkylamino,
arylamino, alkoxy, aryloxy, nitro, cyano, sulfonic acid, sulfate, phosphonic acid,
phosphate, or phosphonate; a lipid, an amino acid, peptide, or cholesterol; and

- 5 R^3 is acyl, alkyl, phosphate, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of being cleaved to the parent compound, or a pharmaceutically acceptable salt thereof, optionally in combination with a pharmaceutically acceptable carrier.
- 10 14. The compound of claim 13, wherein the base is a purine base, R^2 is H, monophosphate, diphosphate, triphosphate or acyl, or a pharmaceutically acceptable salt thereof.
- 15 15. The compound of claim 14, wherein the purine base is selected from the group consisting of guanine, adenine, hypoxanthine, 2,6-diaminopurine and 6-chloropurine, or a pharmaceutically acceptable salt thereof.
16. A pharmaceutical composition comprising an effective treatment amount of a 2'-fluoro- β -L-nucleoside of the formula:



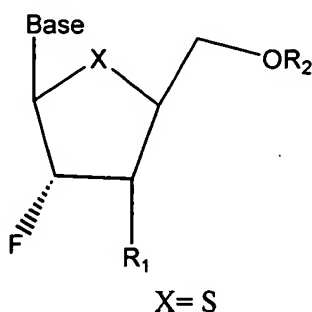
- 20 wherein
- Base is a purine base;
- R^1 is OH, H, OR^3 , N_3 , CN, halogen, CF_3 , lower alkyl, amino, loweralkylamino, di(lower)alkylamino;

5 R^2 is H, monophosphate, diphosphate, triphosphate, a stabilized phosphate prodrug, acyl,
or other pharmaceutically acceptable leaving group which when administered *in vivo*,
is capable of providing a compound wherein R^2 is H or phosphate; sulfonate ester,
benzyl, wherein the phenyl group is optionally substituted with one or more
substituents selected from the group consisting of hydroxyl, amino, alkylamino,
10 arylamino, alkoxy, aryloxy, nitro, cyano, sulfonic acid, sulfate, phosphonic acid,
phosphate, or phosphonate; a lipid, an amino acid, peptide, or cholesterol; and

R^3 is acyl, alkyl, phosphate, or other pharmaceutically acceptable leaving group which
when administered *in vivo*, is capable of being cleaved to the parent compound, or a
pharmaceutically acceptable salt thereof, optionally in combination with a
15 pharmaceutically acceptable carrier.

17. The composition of claim 16, wherein the base is a pyrimidine base selected from the
group consisting of guanine, adenine, hypoxanthine, 2,6-diaminopurine and 6-
chloropurine, or a pharmaceutically acceptable salt thereof.

18. A method for the treatment of hepatitis B infection comprising administering to a patient
in need thereof an effective treatment amount of a 2'-fluoro- β -L-nucleoside of the
formula:



5

wherein

Base is a purine base;

R^1 is OH, H, OR^3 , N_3 , CN, halogen, CF_3 , lower alkyl, amino, loweralkylamino, di(lower)alkylamino;

10

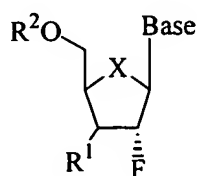
R^2 is H, monophosphate, diphosphate, triphosphate, a stabilized phosphate prodrug; acyl, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of providing a compound wherein R^2 is H or phosphate; sulfonate ester, benzyl, wherein the phenyl group is optionally substituted with one or more substituents selected from the group consisting of hydroxyl, amino, alkylamino, arylamino, alkoxy, aryloxy, nitro, cyano, sulfonic acid, sulfate, phosphonic acid, phosphate, or phosphonate; a lipid, an amino acid, peptide, or cholesterol; and

15

R^3 is acyl, alkyl, phosphate, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of being cleaved to the parent compound, or a pharmaceutically acceptable salt thereof, optionally in combination with a pharmaceutically acceptable carrier.

20

19. A method for the treatment of hepatitis C infection comprising administering to a host in need thereof an effective treatment amount of a 2'-fluoro-(β -L)-nucleoside of the formula:



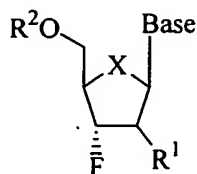
$X = S, CH_2$ or O

25

wherein

- 5 Base is a purine or pyrimidine base;
- R^1 is OH, H, OR^3 , N_3 , CN, halogen, CF_3 , lower alkyl, amino, loweralkylamino or di(lower)alkylamino;
- R^2 is H, monophosphate, diphosphate, triphosphate, or a stabilized phosphate prodrug; acyl, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of providing a compound wherein R^2 is H or phosphate; sulfonate ester, benzyl, wherein the phenyl group is optionally substituted with one or more substituents selected from the group consisting of hydroxyl, amino, alkylamino, arylamino, alkoxy, aryloxy, nitro, cyano, sulfonic acid, sulfate, phosphonic acid, phosphate, or phosphonate; a lipid, an amino acid, peptide, or cholesterol; and
- 10 R^3 is acyl, alkyl, phosphate, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of being cleaved to the parent compound, or a pharmaceutically acceptable salt thereof, optionally in combination with a pharmaceutically acceptable carrier.
- 15

- 20 20. A method for the inhibition of HIV comprising administering to a host in need thereof an effective treatment amount of a 2'-fluoro- β -L-nucleoside of the formula:



$X = S$

wherein

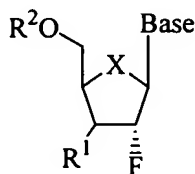
Base is a purine base;

5 R^1 is OH, H, OR^3 , N_3 , CN, halogen, CF_3 , lower alkyl, amino, loweralkylamino, or
di(lower)alkylamino;

R^2 is H, monophosphate, diphosphate, triphosphate, a stabilized phosphate prodrug; acyl,
or other pharmaceutically acceptable leaving group which when administered *in vivo*,
is capable of providing a compound wherein R^2 is H or phosphate; sulfonate ester,
10 benzyl, wherein the phenyl group is optionally substituted with one or more
substituents selected from the group consisting of hydroxyl, amino, alkylamino,
arylamino, alkoxy, aryloxy, nitro, cyano, sulfonic acid, sulfate, phosphonic acid,
phosphate, or phosphonate; a lipid, an amino acid, peptide, or cholesterol; and

15 R^3 is acyl, alkyl, phosphate, or other pharmaceutically acceptable leaving group which
when administered *in vivo*, is capable of being cleaved to the parent compound, or a
pharmaceutically acceptable salt thereof, optionally in combination with a
pharmaceutically acceptable carrier.

21. A method for the treatment of abnormal cellular proliferation in humans comprising
20 administering to a host in need thereof an effective treatment amount of a 2'-fluoro-
nucleoside of the formula:



$X = S \text{ or } CH_2$

wherein

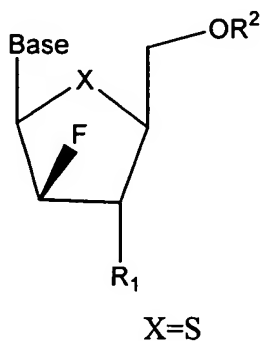
Base is a purine or pyrimidine base;

5 R^1 is OH, H, OR^3 , N_3 , CN, halogen, CF_3 , lower alkyl, amino, loweralkylamino, or di(lower)alkylamino;

R^2 is H, monophosphate, diphosphate, triphosphate, or a stabilized phosphate prodrug, acyl, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of providing a compound wherein R^2 is H or phosphate; sulfonate ester, benzyl, wherein the phenyl group is optionally substituted with one or more substituents selected from the group consisting of hydroxyl, amino, alkylamino, arylamino, alkoxy, aryloxy, nitro, cyano, sulfonic acid, sulfate, phosphonic acid, phosphate, or phosphonate; a lipid, an amino acid, peptide, or cholesterol; and

10 R^3 is acyl, alkyl, phosphate, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of being cleaved to the parent compound, or a pharmaceutically acceptable salt thereof, optionally in combination with a pharmaceutically acceptable carrier.

22. A 2'-fluoro- β -L-nucleoside of the formula:



20 wherein

Base is a purine base;

5 R^1 is H, OR^3 , N_3 , CN, halogen, CF_3 , lower alkyl, amino, loweralkylamino, di(lower)alkylamino;

R^2 is H, monophosphate, diphosphate, triphosphate, or a stabilized phosphate prodrug, acyl, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of providing a compound wherein R^2 is H or phosphate; sulfonate
10 ester, benzyl, wherein the phenyl group is optionally substituted with one or more substituents selected from the group consisting of hydroxyl, amino, alkylamino, arylamino, alkoxy, aryloxy, nitro, cyano, sulfonic acid, sulfate, phosphonic acid, phosphate, or phosphonate; a lipid, an amino acid, peptide, or cholesterol; and

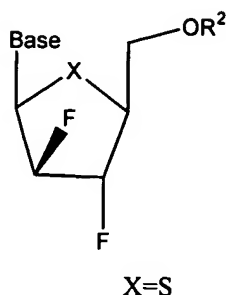
R^3 is acyl, alkyl, phosphate, or other pharmaceutically acceptable leaving group which
15 when administered *in vivo*, is capable of being cleaved to the parent compound, or a pharmaceutically acceptable salt thereof, optionally in combination with a pharmaceutically acceptable carrier.

23. The compound of claim 22, wherein the base is a purine base, R^2 is H, monophosphate, diphosphate, triphosphate or acyl, or a pharmaceutically acceptable salt thereof.
20

24. The compound of claim 23, wherein the purine base is selected from the group consisting of guanine, adenine, hypoxanthine, 2,6-diaminopurine and 6-chloropurine, or a pharmaceutically acceptable salt thereof.

25

25. A pharmaceutical composition comprising an effective treatment amount of a 2'-fluoro- β -L-nucleoside of the formula:



wherein

Base is a purine base;

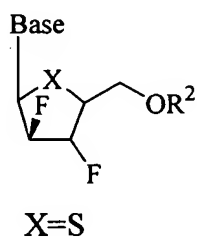
R^1 is H, OR^3 , N_3 , CN, halogen, CF_3 , lower alkyl, amino, loweralkylamino, di(lower)alkylamino;

R^2 is H, monophosphate, diphosphate, triphosphate, or a stabilized phosphate prodrug, acyl, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of providing a compound wherein R^2 is H or phosphate; sulfonate ester, benzyl, wherein the phenyl group is optionally substituted with one or more substituents selected from the group consisting of hydroxyl, amino, alkylamino, arylamino, alkoxy, aryloxy, nitro, cyano, sulfonic acid, sulfate, phosphonic acid, phosphate, or phosphonate; a lipid, an amino acid, peptide, or cholesterol; and

R^3 is acyl, alkyl, phosphate, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of being cleaved to the parent compound, or a pharmaceutically acceptable salt thereof, in combination with a pharmaceutically acceptable carrier.

5 26. The composition of claim 25, wherein the base is a purine base selected from the group consisting of guanine, adenine, hypoxanthine, 2,6-diaminopurine and 6-chloropurine, or a pharmaceutically acceptable salt thereof.

10 27. A method for the treatment of hepatitis B infection comprising administering to a host in need thereof an effective treatment amount of a 2'- β -fluoro- β -L-nucleoside of the formula:



wherein

Base is a purine base;

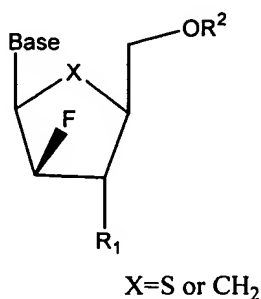
15 R¹ is OH, H, OR³, N₃, CN, halogen, CF₃, lower alkyl, amino, loweralkylamino, or di(lower)alkylamino;

R² is H, monophosphate, diphosphate, triphosphate, a stabilized phosphate prodrug, acyl, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of providing a compound wherein R² is H or phosphate; sulfonate ester, benzyl, wherein the phenyl group is optionally substituted with one or more substituents selected from the group consisting of hydroxyl, amino, alkylamino, arylamino, alkoxy, aryloxy, nitro, cyano, sulfonic acid, sulfate, phosphonic acid, phosphate, or phosphonate; a lipid, an amino acid, peptide, or cholesterol; and

25 R³ is acyl, alkyl, phosphate, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of being cleaved to the parent compound, or a

5 pharmaceutically acceptable salt thereof, optionally in combination with a
pharmaceutically acceptable carrier.

28. A method for the treatment of hepatitis C infection comprising administering to a patient
in need thereof an effective treatment amount of a 2-fluoro- β -L-nucleoside of the
10 formula:



wherein

Base is a purine or pyrimidine base;

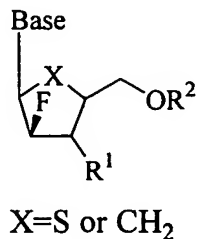
R¹ is OH, H, OR³, N₃, CN, halogen, CF₃, lower alkyl, amino, loweralkylamino,
15 di(lower)alkylamino;

R² is H, monophosphate, diphosphate, triphosphate, a stabilized phosphate prodrug, acyl,
or other pharmaceutically acceptable leaving group which when administered *in vivo*,
is capable of providing a compound wherein R² is H or phosphate; sulfonate ester,
benzyl, wherein the phenyl group is optionally substituted with one or more
20 substituents selected from the group consisting of hydroxyl, amino, alkylamino,
arylamino, alkoxy, aryloxy, nitro, cyano, sulfonic acid, sulfate, phosphonic acid,
phosphate, or phosphonate; a lipid, an amino acid, peptide, or cholesterol; and

R³ is acyl, alkyl, phosphate, or other pharmaceutically acceptable leaving group which
when administered *in vivo*, is capable of being cleaved to the parent compound, or a

5 pharmaceutically acceptable salt thereof, optionally in combination with a pharmaceutically acceptable carrier.

29. A method for the inhibition of HIV comprising administering to a host in need thereof an effective treatment amount of a 2'-fluoro- β -L-nucleoside of the formula:



10 wherein

Base is a purine base;

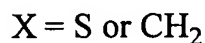
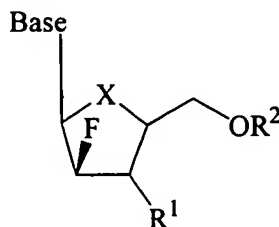
R¹ is OH, H, OR³, N₃, CN, halogen, CF₃, lower alkyl, amino, loweralkylamino, or di(lower)alkylamino;

15 R² is H, monophosphate, diphosphate, triphosphate, a stabilized phosphate prodrug, acyl, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of providing a compound wherein R² is H or phosphate; sulfonate ester, benzyl, wherein the phenyl group is optionally substituted with one or more substituents selected from the group consisting of hydroxyl, amino, alkylamino, arylamino, alkoxy, aryloxy, nitro, cyano, sulfonic acid, sulfate, phosphonic acid, phosphate, or phosphonate; a lipid, an amino acid, peptide, or cholesterol; and

20 R³ is acyl, alkyl, phosphate, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of being cleaved to the parent compound, or a pharmaceutically acceptable salt thereof, optionally in combination with a pharmaceutically acceptable carrier.

25

30. A method for the treatment of abnormal cellular proliferation in humans comprising administering to a host in need thereof an effective treatment amount of a 2'-fluoro- β -L-nucleoside of the formula:



10

wherein

Base is a purine or pyrimidine base;

R^1 is H, OR^3 , N_3 , CN, halogen, CF_3 , lower alkyl, amino, loweralkylamino, or di(lower)alkylamino;

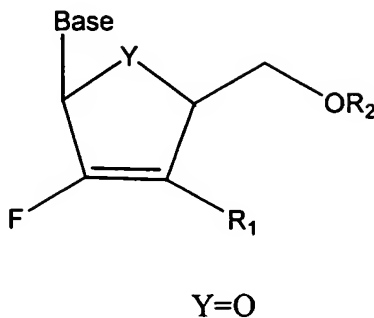
15

R^2 is H, monophosphate, diphosphate, triphosphate, or a stabilized phosphate prodrug, acyl, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of providing a compound wherein R^2 is H or phosphate; sulfonate ester, benzyl, wherein the phenyl group is optionally substituted with one or more substituents selected from the group consisting of hydroxyl, amino, alkylamino, arylamino, alkoxy, aryloxy, nitro, cyano, sulfonic acid, sulfate, phosphonic acid, phosphate, or phosphonate; a lipid, an amino acid, peptide, or cholesterol; and

20

R^3 is acyl, alkyl, phosphate, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of being cleaved to the parent compound, or a pharmaceutically acceptable salt thereof, optionally in combination with a pharmaceutically acceptable carrier.

31. A 2'-fluoro- β -L-nucleoside of the formula:



wherein

Base is a purine base;

10 R^1 is OR^3 , N_3 , CN , CF_3 , lower alkyl, amino, loweralkylamino, or di(lower)alkylamino;

R^2 is H, monophosphate, diphosphate, triphosphate, a stabilized phosphate prodrug or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of providing a compound wherein R^2 is H or phosphate; sulfonate ester, benzyl, wherein the phenyl group is optionally substituted with one or more substituents selected from the group consisting of hydroxyl, amino, alkylamino, arylamino, alkoxy, aryloxy, nitro, cyano, sulfonic acid, sulfate, phosphonic acid, phosphate, or phosphonate; a lipid, an amino acid, peptide, or cholesterol; and

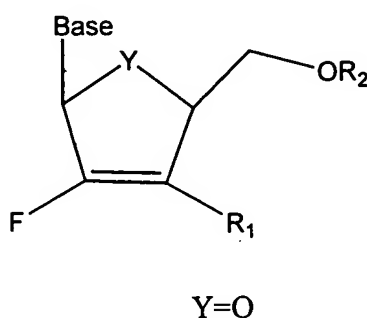
15 R^3 is acyl, alkyl, phosphate, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of being cleaved to the parent compound, or a pharmaceutically acceptable salt thereof.

20

32. The 2'-fluoronucleoside of claim 31, wherein the base is a purine base, R^2 is hydrogen, monophosphate, diphosphate, triphosphate or acyl, or a pharmaceutically acceptable salt thereof.

33. The 2'-fluoronucleoside of claim 31, wherein the purine base is selected from the group consisting of guanine, adenine, hypoxanthine, 2,6-diaminopurine and 6-chloropurine, or a pharmaceutically acceptable salt thereof.

- 10 34. A pharmaceutical composition comprising an effective treatment amount of a 2'-fluoro- β -L-nucleoside of the formula:



wherein

Base is a purine base;

- 15 R^1 is OR^3 , N_3 , CN , CF_3 , lower alkyl, amino, loweralkylamino, or di(lower)alkylamino;

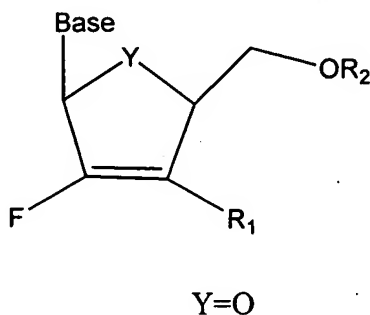
R^2 is H, monophosphate, diphosphate, triphosphate, a stabilized phosphate prodrug, acyl, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of providing a compound wherein R^2 is H or phosphate; sulfonate ester, benzyl, wherein the phenyl group is optionally substituted with one or more substituents selected from the group consisting of hydroxyl, amino, alkylamino, arylamino, alkoxy, aryloxy, nitro, cyano, sulfonic acid, sulfate, phosphonic acid, phosphate, or phosphonate, a lipid, an amino acid, peptide, or cholesterol; and

- 20 R^3 is acyl, alkyl, phosphate, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of being cleaved to the parent compound, or a

5 pharmaceutically acceptable salt thereof, together with a pharmaceutically acceptable carrier.

10 35. The composition of claim 34, wherein the purine base is selected from the group consisting of guanine, adenine, hypoxanthine, 2,6-diaminopurine and 6-chloropurine, or a pharmaceutically acceptable salt thereof.

36. A method for the treatment of hepatitis B infection comprising administering to a patient in need thereof an effective treatment amount of a 2'-fluoro-(β -D or β -L)-nucleoside of the formula:



15 wherein

Base is a purine base;

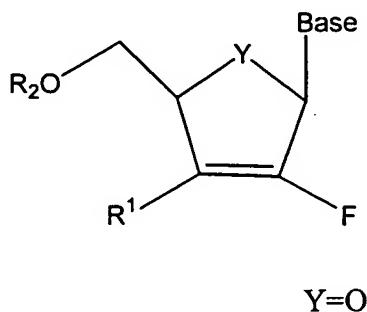
R^1 is OR^3 , N_3 , CN , CF_3 , lower alkyl, amino, loweralkylamino, or di(lower)alkylamino;

20 R^2 is H, monophosphate, diphosphate, triphosphate, a stabilized phosphate prodrug, acyl, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of providing a compound wherein R^2 is H or phosphate; sulfonate ester, benzyl, wherein the phenyl group is optionally substituted with one or more substituents selected from the group consisting of hydroxyl, amino, alkylamino,

5 arylamino, alkoxy, aryloxy, nitro, cyano, sulfonic acid, sulfate, phosphonic acid, phosphate, or phosphonate; a lipid, an amino acid, peptide, or cholesterol; and

R^3 is acyl, alkyl, phosphate, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of being cleaved to the parent compound, or a pharmaceutically acceptable salt thereof.

- 10 37. A method for the treatment of hepatitis C infection comprising administering to a patient in need thereof an effective treatment amount of a 2'-fluoro-nucleoside of the formula:



wherein

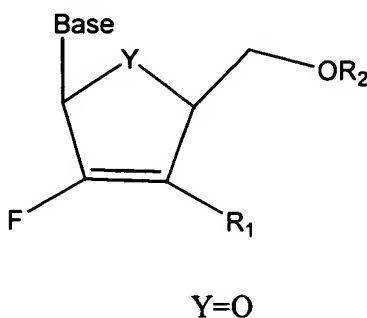
15 Base is a purine or pyrimidine base;

R^1 is OH, OR^3 , N_3 , CN, CF_3 , lower alkyl, amino, loweralkylamino, or di(lower)alkylamino, and base refers to a purine or pyrimidine base;

R^2 is H, monophosphate, diphosphate, triphosphate, a stabilized phosphate prodrug, acyl, or other pharmaceutically acceptable leaving group which when administered *in vivo*, is capable of providing a compound wherein R^2 is H or phosphate; sulfonate ester, benzyl, wherein the phenyl group is optionally substituted with one or more substituents selected from the group consisting of hydroxyl, amino, alkylamino, arylamino, alkoxy, aryloxy, nitro, cyano, sulfonic acid, sulfate, phosphonic acid, phosphate, or phosphonate; a lipid, an amino acid, peptide, or cholesterol; and

5 R^3 is acyl, alkyl, phosphate, or other pharmaceutically acceptable leaving group which
when administered *in vivo*, is capable of being cleaved to the parent compound, or a
pharmaceutically acceptable salt thereof.

10 38. A method for inhibiting the replication of HIV comprising administering to a patient in
need thereof an effective treatment amount of a 2'-fluoro- β -L-nucleoside of the formula:



wherein

Base is a purine base;

R^1 is OR^3 , N_3 , CN , CF_3 , lower alkyl, amino, loweralkylamino, or di(lower)alkylamino;

15 R^2 is H, monophosphate, diphosphate, triphosphate, a stabilized phosphate prodrug, acyl,
or other pharmaceutically acceptable leaving group which when administered *in vivo*,
is capable of providing a compound wherein R^2 is H or phosphate; sulfonate ester,
benzyl, wherein the phenyl group is optionally substituted with one or more
substituents selected from the group consisting of hydroxyl, amino, alkylamino,
20 arylamino, alkoxy, aryloxy, nitro, cyano, sulfonic acid, sulfate, phosphonic acid,
phosphate, or phosphonate; a lipid, an amino acid, peptide, or cholesterol; and

R^3 is acyl, alkyl, phosphate, or other pharmaceutically acceptable leaving group which
when administered *in vivo*, is capable of being cleaved to the parent compound, or a
pharmaceutically acceptable salt thereof.

5

39. The 2'-fluoro- β -D or β -L-nucleoside of claim 25, wherein R^1 and R^2 are hydrogen.

40. The pharmaceutical composition of claim 16, wherein R^1 and R^2 of the 2'-fluoro- β -L-nucleoside are hydrogen.

10

41. The method of claim 18, wherein R^1 and R^2 of the 2'-fluoro- β -L-nucleoside are hydrogen.

42. The method of claim 20, wherein R^1 and R^2 of the 2'-fluoro- β -L-nucleoside are hydrogen.

15

43. The method of claim 21, wherein X of the 2'-fluoro-nucleoside is S.

44. The 2'-fluoro- β -L-nucleoside of claim 22, wherein R^1 and R^2 are hydrogen.

20

45. The pharmaceutical composition of claim 25, wherein R^1 and R^2 of the 2'-fluoro- β -L-nucleoside are hydrogen.

46. The method of claim 27, wherein R^1 and R^2 of the 2'-fluoro- β -L-arabinonucleoside are hydrogen.

25

- 5 47. The method of claim 29, wherein R^1 and R^2 of the 2'-fluoro- β -L-arabinonucleoside are hydrogen.
48. The method of claim 30, wherein X of the 2'-fluoro- β -L-arabinonucleoside is CH_2 .
- 10 49. The 2'-fluoro- β -D or β -L-nucleoside of claim 13, wherein R^1 is OH or OR^3 .
50. The pharmaceutical composition of claim 16, wherein R^1 of the 2'-fluoro- β -L-nucleoside is OH or OR^3 .
- 15 51. The method of claim 18, wherein R^1 of the 2'-fluoro- β -L-nucleoside is OH or OR^3 .
52. The method of claim 20, wherein R^1 of the 2'-fluoro- β -L-nucleoside is OH or OR^3 .
53. The 2'-fluoro- β -L-nucleoside of claim 22, wherein R^1 is OH or OR^3 .
- 20 54. The pharmaceutical composition of claim 25, wherein R^1 of the 2'-fluoro- β -L-nucleoside is OH or OR^3 .
55. The method of claim 27, wherein R^1 of the 2'-fluoro- β -L-arabinonucleoside is OH or OR^3 .
- 25

- 5 56. The method of claim 27, wherein R^1 of the 2'-fluoro- β -L-arabinonucleoside is OH or OR^3 .